

REMARKS/ARGUMENTS

Claims 1-23 are active in the case. Reconsideration is respectfully requested.

The present invention relates to a process for preparing at least one partial oxidation and/or ammoxidation product of a hydrocarbon.

Rejection, 35 USC 103

Claims 1-23 stand rejected based on 35 USC 103(a) as obvious over Maher et al '463 in view of Maunders et al, U.S. Patent 5,550,309. This ground of rejection is respectfully traversed.

The Examiner comments with regard to Maher et al, that the reference is "silent on the removal of fine particles of catalyst before entering the (partial oxidizing or) ammoxidizing zone." Applicants agree with the Examiner in this statement. However, the Examiner continues in his remarks by stating that it is well known in the art to which the present invention pertains to remove fine particles of dehydrogenation catalyst from the product stream of dehydrogenated hydrocarbon before partial oxidation or ammoxidation of the dehydrogenated hydrocarbon because it is well known that such fine particles of catalyst are mixed with reactants and final products. It is here that applicants disagree with the Examiner. The background section of the specification makes it clear that indeed it is well known to subject a saturated light hydrocarbon such as ethane or propane to catalytic dehydrogenation to form the corresponding unsaturated alkene which is then subjected to partial oxidation or ammoxidation to form the corresponding unsaturated aldehyde or nitrile product.

Even if it would have been known that the product gas of dehydrogenation containing unsaturated alkane contains fine particles of dehydrogenation catalyst, it was not known prior

to the present invention to modify the dehydrogenation process by removing fine particles of catalyst from the unsaturated alkane product prior to subjecting it to partial oxidation and/or ammoxidation. The available prior art does not discuss any advantage to the overall process of producing partial oxidized and/or ammoxidized product from a saturated light alkane by specifically removing fine dehydrogenation catalyst particles from the product gas of dehydrogenation prior to the oxidation/ammonoxidation reaction. Normally, a given step that employs a catalyst for a specific reaction of a multistep process is specific to that step and has no impact on a following step that may require an entirely different type of catalyst for a different reaction. Rather, it is applicants discovery, as mentioned on page 2, line 23 to page 3, line 29 of the specification, that advantages in the production of partially oxidized or ammoxidized product of a light hydrocarbon can be achieved if the gas material discharged from an initial light hydrocarbon dehydrogenation reactor, which contains fine particles of dehydrogenation catalyst, is subjected to processing by which fine particles of catalyst are removed from the gas. Thus, since it is applicants who have discovered the advantages of catalyst removal, it is apparent that the statement at the bottom of page 3 of the Office Action to the effect that the removal of fine catalyst particles from reactants and final products can be considered to be routine manipulation of process steps is in error. Again, it is only applicants who have found there to be any advantage whatever to the employment of a manipulative process step of removing catalyst particles specifically from the product gas obtained from light hydrocarbon dehydrogenation. Accordingly, since Maher et al does not teach or suggest catalyst particle removal from the product gas of light hydrocarbon dehydrogenation, the reference fails to obviate the invention as claimed.

The Examiner cites the Maunders et al patent for its teaching of removal of catalyst particles from a process stream. However, applicants have not been able to find any such teaching for any purpose whatever in the patent. Accordingly, the deficiencies of Maher et al

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are neither overcome nor improved upon by Maunders et al. Withdrawal of the rejection is respectfully requested.

It is believed that the application remains in proper condition for allowance. Early notice to this effect is earnestly solicited.

Respectfully submitted,

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